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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,670

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Cecile Lutz

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EXAMINER

LAWRENCE JR, FRANK M

ART UNIT

PAPER NUMBER

1797

NOTIFICATION DATE

DELIVERY MODE

05/19/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@mwzb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,670	<b>Applicant(s)</b> LUTZ ET AL.	
	<b>Examiner</b> Frank M. Lawrence	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                     |                                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                         | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities: In line 16 of claim 1, the comma after "90%" should be deleted. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recitation of "and no other adsorbent" in claim 1 is considered to be new matter because the mere absence of a positive recitation in the specification is not basis for an exclusion in the claims (see MPEP 2173.05(i)). The original disclosure contains no mention that "no other adsorbent" is used for adsorbing of the carbon dioxide, hydrocarbons, and NOx. Claims 2-17 are rejected for depending from rejected claim 1.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 9 are indefinite because while claim 1 recites that no other adsorbent

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is used for adsorption, claim 9 recites that there is a blend of several adsorbents that one skilled in the art would understand to be capable of adsorbing at least some of the recited contaminants.

Claims 2-8 and 10-17 are indefinite for depending from an indefinite parent claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2 and 7-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Bancon et al. (2003/0126989 A1).

8. Bancon '989 teach a process for removing carbon dioxide, nitrogen oxides, water, and hydrocarbons from an air-based syngas stream, comprising adsorbing the contaminants on an aggregated zeolite adsorbent followed by desorption and regeneration of the material in a PSA or TSA system. The zeolite can comprise over 90% LSX zeolite that is at least 90% sodium exchanged, and 5-10% residual binder that can be zeolitized (see paragraphs 1, 5, 10-12, 17-22). The adsorbent can further be mixed with or include layers of additional zeolite A or NaX in a ratio of 1:19 to 19:1 (paragraphs 11, 28-31 and col. 2, lines 24-51 of US 6,616,732, equivalent of WO 01/24923 cited in paragraph 11). The adsorbent can be prepared by mixing zeolite powder with a binder, drying at 400-700°C and zeoloitizing the binder (paragraphs 13, 14). The LSX zeolite will inherently have a number average of the crystal size less than 4 microns because it has the same structure as the instant LSX zeolite.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bancon et al. '989 in view of Grandmougin et al. (6,616,732).

11. Bancon et al. '989 disclose all of the limitations of the claims except that preparation includes washing, drying, and activation at a preferred temperature, and sodium exchange before or after blending. Grandmougin et al. '732 disclose the preparation of a low silica X zeolite for removing carbon dioxide from a gas, comprising mixing 5-95 wt% NaX with 95-5 wt % NaLSX, ion exchanging before or after blending, agglomeration with a binder, drying at 300-700°C, zeolitizing the binder, washing, drying and activating at 300-700°C (see col. 2, lines 35-41, col. 3, lines 13-60). It would have been obvious to one having ordinary skill in the art to modify the preparation method of Bancon et al. '989 by using the washing, drying, activation and exchange steps of Grandmougin et al. '732 in order to provide a more activated sorbent, devoid of water and other impurities that can interfere with adsorption of target contaminants.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bancon et al. '989 in view of Plee (6,264,881).

13. Bancon et al. '989 disclose all of the limitations of the claim except that the binder is zeolitized into LSX and/or LSX and X zeolites. Plee '881 discloses the manufacture of aggregated LSX zeolites using binders that convert into LSX zeolite (see abstract, example 3). It

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would have been obvious to one having ordinary skill in the art to modify the method of Bancon et al. '989 by using the binders of Plee '881 in order to minimize the amount of inert residual binder that does not participate in adsorption.

***Response to Arguments***

14. Applicant's arguments filed April 9, 2010 have been fully considered but they are not persuasive. Applicant argues that Bancon et al. '989 and Grandmougin et al. '32 fail to anticipate the claims because they disclose the use of additional adsorbents for the removal of hydrocarbons and NO<sub>x</sub>, while the instant claims require their adsorption on the single recited aggregate adsorbent. This is not found persuasive because Bancon et al. '989 discloses that the additional sorbents are optional (possible) and one skilled in the art would understand that the primary aggregate carbon dioxide sorbent is inherently capable of removing hydrocarbons and NO<sub>x</sub>. The patent also states that the primary sorbent can be used "by itself" in the presence of water, hydrocarbons and NO<sub>x</sub> (see paragraphs 20, 28-31). Additionally, claim 1 recites that "at least some" of the hydrocarbons and NO<sub>x</sub> are adsorbed on the adsorbent and no other adsorbent. It is submitted that "at least some" of those impurities will adsorb on the primary sorbent and not the additional sorbents even if they are present.

15. Applicant also argues that the prior art does not disclose a binder that is inert to adsorption, however in Bancon et al. '989, zeolitization is disclosed as an optional process to reduce the residual (inert) binder content to 5-10% by weight (paragraph 14) to achieve at least 90% zeolite content. The possible binders listed include some other than zeolitizable kaolin or metakaolin (paragraph 13).

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16. Applicant further argues that the Grandmougin et al. '732 and Plee '881 patents fail to disclose the adsorption of carbon dioxide or the exclusion of additional sorbents, however it is submitted that these secondary references are cited only to disclose a motivation for using the adsorbent preparation method and zeolitized binder type, respectively.

***Conclusion***

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Marcheschi can be reached on 571-272-1374. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Frank M. Lawrence/  
Primary Examiner, Art Unit 1797

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